

GENERIC ENVIRONMENTAL MANAGEMENT PLAN



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1. INTRODUCTION

The vision of the Department: Integrated Environmental Management is to promote an environmentally sustainable city, which anticipates, manages and reduces its vulnerability to potential global and local environmental shock, and works consistently to reduce the impacts of its own built environment, and urban developmental processes on the broader envelop of the natural resources.

The Generic Environmental Management Plan (GEMP) seeks to realize the Mogale City's vision and also ensures that the environmental rights (Section 24 of the Constitution) contained in the Bill of Rights are concretised by MCLM in all capital projects which do not require environmental authorisation but are implemented by the council Departments within MCLM.

GEMP is a tool used to ensure that undue or reasonably adverse impacts of the construction, operation and decommissioning of projects on the environment are prevented or minimised; and that the positive benefits of the projects are enhanced (DEADP 2005).

GEMP is therefore an important tool for ensuring that management actions required to ensure that environmental resource is not compromised are clearly defined and implemented through all phase of the project-cycle or potential impacts associated with the project are properly mitigated and controlled.

2. OBJECTIVES OF THE GEMP

The objectives of GEMP are:

- 1 To identify possible impacts of the proposed activity on the environment,
- 2 To develop measures to minimise, mitigate and manage those impacts,

- 3 To ensure compliance with the legal framework, regulatory authority stipulations and guidelines as Published or amended from time to time which may be local, provincial, national or international;
- 4 To verify environmental performance through monitoring;
- 5 To respond to unforeseen changes and events during project implementation;
- 6 To promote the documentation of continual environmental improvement and performance by all MCLM Departments; and
- 7 To put in place mitigation measures to as far as possible prevent and address emergency/disaster situations.

3. BEST PRACTICE INITIATIVES

A good approach to facilitate legal enforceability of the GEMP is to consider it during project planning to ensure its integration into tender and contract document (between the proponent and sub-contractor) as a set of environmental specifications. The incorporation of environmental considerations into the tender and contract documents is a fundamental prerequisite for the effective implementation of the GEMP.

Using this approach the proponent and contractor thus have a clear understanding of the environmental requirements and associated costs prior to finalization of appointment.

Construction and operation of the project may be required to comply with different legislation, such as legislation related to: general land use and land conditions, water, surface drainage management and calming, air quality, hazardous substances, storage, transport and disposal of waste and waste water, occupational health and safety, traffic and transportation, cultural and heritage recourses, and noise.

Therefore it is important that the MCLM Department(s) identify the legislation, standards, guidelines and associated permits or licences that apply to the project. Identification of legal requirement is related to management activities in the GEMP.

A list of legislation relevant to environmental protection is very long, however, at a minimal the MCLM Department(s) need to consider the following Acts when undertaking a project:

- 1 National Environmental Management Act (Act 107 of 1998) as amended;
- 2 Environment Conservation Act (Act 73 of 1989);
- 3 National Water Act (Act 36 of 1998);
- 4 Hazardous Substances Act (Act 15 of 1973);
- 5 National Environmental Management: Protected Areas Act (Act 57 of 2003);
- 6 National Environmental Management: Biodiversity Act (Act 10 of 2004);
- 7 National Environmental Management: Air Quality Act (Act 39 of 2004);
- 8 Air Pollution Prevention Act of 1965 (APPA): parts 11, 111, 1V and V
- 9 Explosives Act (Act 26 of 1956);
- 10 National Heritage Resources Act (Act 25 of 1999)
- 11 National Environmental Management: Waste Act (Act 59 of 2008)
- 12 World Heritage Site Convention Act (for areas directly abutting onto or within the COH WHS)

4. SCOPE OF GEMP

GEMP aims for application to a range of types and scales of developments or activities (that are not listed in terms of the NEMA Regulations, as published in April 2006) likely to be undertaken by the different Departments. The GEMP focuses at the project level and is generic to also apply to the diverse situations and/ or developments. Therefore it may be adopted and made specific to the particular project.

5. ROLES OF KEY STAKEHOLDERS

5.1. MCLM Departments

The MCLM Departments are responsible for the implementation of the GEMP and, where applicable, ensuring that the relevant legislative requirements are adhered to.

It should be noted that, where applicable, no development should be commenced with on site prior to obtaining an ROD from GDARD and prior to the approval of the relevant land use rights/proclamation of a township, approval of a site development plan and building plans.

Where construction or operation activities are contracted out, it is the relevant Department's responsibility to influence the implementation of GEMP in consultation with DIEM, thereby ensuring responsible and environmental sensitivity in the implementation of the projects. The Departments are therefore responsible for liaising directly with Department: Integrated Environmental Management (DIEM) with respect to the implementation of the GEMP and meeting associated legal requirements. Such GEMP will form an integral part of the Service Level Agreement entered into with an Appointed Service Provider, and should be annexed to such SLA in full. Non-compliance to the GEMP by any Service Provider should lead to the suspension and termination of an appointment.

The Departments must identify a Project manager who has over-all responsibility for managing the project contractors and for ensuring that the environmental management requirements are met.

All decisions regarding environmental procedure and protocols must be approved by the project manager, who also has an authority to stop any construction activity in contravention of the GEMP.

5.2. Environmental Control Officer (ECO) or Project Manager

An ECO/Project Manager must ensure that the GEMP is adhered to through out the project lifespan and the following are the recommendations for implementation:-

- 1 The ECO/Project Manager must adequately familiarise him/herself with the requirements of the GEMP and be conversant with the implementation of the environmental management specifications.
- 2 The ECO/Project Manager must maintain, update and review the implementation plan for the GEMP, monitor the performance of the project through involving DIEM on monitoring conducted and conduct regular site inspections and audits (at least once a week) to ensure that the system for implementation of the GEMP functions effectively, and submit monthly reports thereon to DIEM.
- 3 The ECO/Project Manager will be tasked with the responsibility of advising the contractors on corrective actions to be adopted and implemented in consultation with DIEM.

5.3. Contractor(s) /subcontractor(s)

Each contractor affected by the GEMP must assign responsibility to a **Contractor's representative or ECO** for the on-site implementation of the GEMP. The following are the recommendations for the implementation of the GEMP:

- 1 The contractor's representative or ECO can be the site agent, site engineer, a dedicated environmental officer, or an independent consultant.
- 2 The contractor must ensure that the contractor's representative or ECO is suitably qualified to perform the tasks and is appointed at the level at which she/he can interact effectively with other site contractors, labourers and the public;
- 3 The contractor's representative or ECO must ensure that all sub-contractors working under the contractor abide by the requirements of the GEMP.

The contractor is answerable to the project manager for all environmental issues associated with the project. The contractor performance will, amongst others, be assessed on health, safety and environment criteria.

The project manager must inform the contractor of the GEMP obligations and associated environmental training to be undertaken. Contractors must communicate these obligations to their sub-contractors and ensure that there is compliance to GEMP. The

Department IEM reserves the right to carry out unannounced site inspections at any given time to monitor the accurate implementation of the GEMP.

The contractor or sub-contractor(s) is required to provide method statements setting out in detail how the management actions contained in the GEMP will be implemented in order to ensure that the environmental management objectives are achieved. The method statement must be reviewed and appropriately approved by DIEM.

5.4. Lead authority

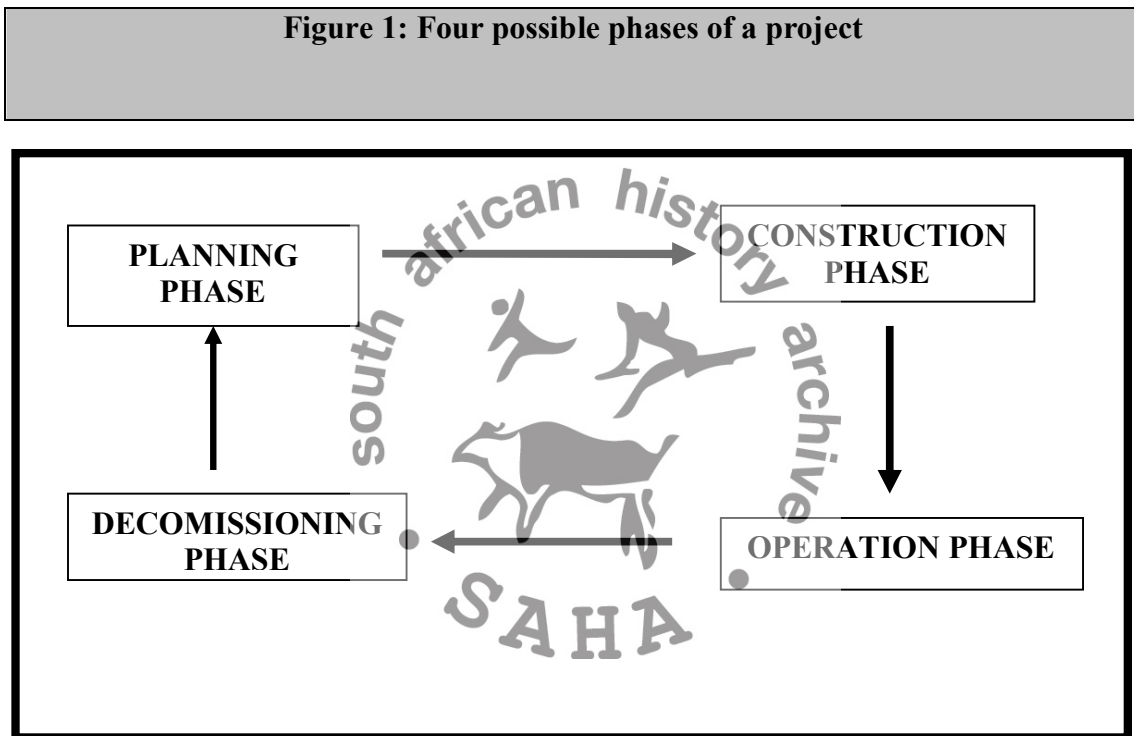
The extent to which authorities are involved with the GEMP will depend on the scale and the projects and reporting will be done as a measure of best practice. The authority may be required to perform the following roles:

- 1 Ensure that the permits and/ or licences necessary for the construction and operation of the project have been obtained.
- 2 These legal requirements should be incorporated into the GEMP monitoring report. Note that permits may not be issued only by the lead authority for the GEMP, but also by associated authorities (e.g. The Department of Water and Environmental Affairs (DWEA))
- 3 Review monitoring and audit reports, if required.
- 4 Review whether there is compliance by the Departments and the contractor with the terms of the EMP and the ROD specifications, permit/licence conditions, and, possibly, method statements.
- 5 Whenever necessary, the authorities should assist the Departments in understanding and meeting the specified GEMP requirements.
- 6 The authorities may perform random inspections and controls to check compliance. In case of persistent non-compliance, the Departments will be required to issue a notice which requires the contractor to provide and action plan with corrective measures and have it approved by the authority.

- 7 Compliance enforcement will be undertaken through the use of fines outlined in Integrated Environmental Management By-Laws published during 11 January 2007 and the applicable MCLM Environmental Health By-Laws. All other non-compliance regulated in terms other legislation will be referred to the relevant authorities.

6. MITIGATION MEASURES

The project is expected to go through four distinctive phases (**Figure 1**) The EMP is accordingly separated into measures dealing with the various project phases.



General mitigation measures are provided for each of the project phases, while specific measures or actions needed to address the identified environmental impacts are stipulated (as summarised in Tables below). Also frequent actions and responsible parties are indicated.

1. PLANNING PHASE

Environmental Aspect	Control Measures	Responsible parties	Frequency
GEMP Induction/ communication	Introduce the project manager to the project team.	Project manager	<i>Once off</i>
	Training and communication of the contractors and sub-contractors on the GEMP and its contents.	Project manager	<i>On - going</i>
	Continually check and record the ongoing developments of the project and ensure the contractors are meeting the requirements as set out in the EMP.		
Legal and other Requirements	<p>Familiarise him /herself with all the environmental legal requirements pertaining to the project.</p> <p>Train all members of his/her personnel to gain an understanding of their environmental legal rights and obligations.</p> <p>Comply with all environmental legal provisions as well as requirements prescribed by authorities within the context of their legal discretionary powers.</p>	Project manager	<i>On - going</i>
Design	<p>All designs of the infrastructure must aim at the prevention or minimisation of any form of environmental pollution and/or ecological degradation, through the:</p> <ol style="list-style-type: none"> 1 The prevention on inflow of sewage effluent into storm water drains and natural water bodies such as rivers, streams, wetlands etc. 2 The prevention of blockages of effluent pipelines, pump-stations and storm water drainage systems 3 The prevention of run-off containing silt and foreign 	Project manager	<i>Once off</i>

	<p>objects/materials entering downstream water courses</p> <p>4 Landscaping must exclude the planting of declared weeds or invasive alien vegetation and must aim to incorporate existing elements of the natural landscapes, such as existing mature trees etc.</p>		
Waste	Identify suitable landfill site suitable for the disposal of waste likely to be generated during the construction period.	Project manger and Contractor	<i>Once off</i>
	<p>If possible, local labour must be employed to avoid the need to construct a camp for imported labour.</p> <p>Identifying construction campsite. Avoid environmental sensitive areas such as floodlines, ridges, wetland areas etc. The location should preferably be an area already degraded.</p> <p>The construction camp to be established must be big enough to store tools, machinery, stock piling and paving bricks etc (for a limited period only).</p>	Project manger and Contractor	<i>Once off</i>
	<p>The camp must conform to all contractual aspects and standards applicable. This would include:</p> <ol style="list-style-type: none"> 1 There must be self-sustaining refuse collection and disposal system. The contractor is encouraged to practice waste separation at source. 2 Provision must be made for emergency cases. 3 Food cooking must only be done in areas designated by the ECO. Cooking of food should preferably not be done on open fires but alternative means should be looked at (e.g. gas stoves). 	Contractor	<i>On going</i>

	<p>4 The construction camp should be kept neat and tidy at all times.</p> <p>5 The dismantling and reinstatement of the construction camp must be done to the satisfaction of the developer.</p> <p>6 Make provision for enough temporary ablution facilities.</p>		
Soil	<p>Identify suitable site or burrow pit (if applicable) for the acquisition of soil. All new burrow pits or extension of existing pits require an Environmental Management Programme Report (EMPR) in terms of the Minerals Act (Act no. 50 of 1991)</p> <p>Stockpiling of soil must be restricted from sensitive areas of the site (e.g. wetlands, floodlines, springs etc)</p>	Contractor	<i>Once off</i>
Vegetation	<p>No clearing of prior to receipt of all approvals from respective authorities.</p> <p>Clearing of vegetation must be limited to areas around where construction is earmarked to take place</p>	Contractor	<i>On going</i>
	Labour intensive methods must be used where feasible in consultation with the EPWP Officer of the Municipality.	Contractor	<i>Once off</i>
	Local labour must be employed (where possible) in consultation with the Enterprise Development Section of the Municipality.	Project manger and Contractor	<i>Once off</i>
	Local suppliers must be used, as far as possible.	Contractor	<i>Once off</i>

2. CONSTRUCTION PHASE

Environmental Aspects	Mitigation measures	Responsible Party	Frequency
Communication of GEMP	<p>Training and communication of the contractors and sub-contractors on the GEMP and its contents.</p> <p>Continually check and record the ongoing developments of the project and ensure that contractors are meeting the requirements as set out in the GEMP.</p>	Project manager	<i>On - going</i>
	<p>Information boards must be erected at key locations of the construction site, in order to ensure that the public is advised of the construction activities.</p> <p>Information should be circulated at least 10 days before the start of construction.</p>	Contractor	<i>Once- off</i>
	<p>Queries and complaints from the public regarding operational activities must be documented, and entered into a compliance register.</p> <p>A Community Liaison Officer (CLO) responsible for facilitating communication between the contractor and the community within which the project is been undertaken must be identified and appointed. The appointment of such a CLO will be throughout the life of the project.</p>	Contractor	<i>On- going</i>
Construction Procedures	<p>Submit written procedures to the ECO 10 days prior to construction activities, for all construction activities; such information should include:</p> <ul style="list-style-type: none"> ▪ Timing of activities, equipment and materials 	Contractor	<i>On going</i>

	<p>to be used</p> <ul style="list-style-type: none"> ▪ Methods for preparing and cleaning the site both during construction and on completion of the works ▪ Disposal of waste and any other information deemed necessary ▪ Sanitation facilities and waste management ▪ Storage of chemicals, fuels and related products. ▪ Designs should comply with all the conditions contained in land use approvals and conditions thereof, permits, licenses, agreements or directives and codes of Practice e.g. water abstraction and water use licenses, a registration certificate for air emissions or any conditions set by the Infrastructure Department (Roads, Surface Drainage, Electricity, Water and Sanitation) or other controlling authorities through directives. ▪ Designs should also, where feasible, incorporate sustainable practices on resource conservation such as energy (aligned to NERSA) and water saving methods. 		
Construction Procedures (Cont.)	Work should not commence on any activity until such time as the construction procedure has been scrutinised and agreed in writing by the developer.	Contractor	<i>On- going</i>
Soil	<ol style="list-style-type: none"> 1 No vehicle to be serviced at construction site. 2 Drip-trays to be used in cases of leaks from construction vehicles. 3 Where soil contamination has occurred, the 	Contractor	<i>Once off</i>

	<p>contaminated layers need to be removed and disposed off at the suitably permitted landfill site.</p> <p>4 Protect stockpiled topsoil by prevention of compaction, contamination and mixing with any other material.</p> <p>5 Topsoil stockpiles must not be contaminated with oils, diesel, petrol waste or any other foreign matter.</p> <p>6 Implement adequate erosion control measures for areas of fragile and prone to erosion of soil.</p> <p>7 Compacted areas must be ripped to allow for penetration and uptake of a root system.</p> <p>8 Temporary fuel storage tanks to be provided with impermeable floors and bund walls to prevent pollution during accidental spillages. The bund wall should be able to contain 110% of the tanks volume.</p> <p>9 Prevent spillages from fuel storage area during decanting. The area should be provided with proper warning signage (e.g. no smoking, open fires, fire extinguisher.)</p> <p>Note that above ground storage tank of hazardous substance of 30 cubic metres or more requires authorisation as per EIA regulations.</p> <p>10 Concrete should not be mixed directly on the ground. Plastic liners or mixing trays are to be used.</p>		
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	<p>11 Under no circumstance may the veld be used for ablution purposes.</p> <p>12 Temporary ablution facilities must be placed at strategic points, serviced at least once a week</p>		
<p>Surface Water</p>	<p>1 Drainage lines must be kept clean and unobstructed.</p> <p>2 No construction rubble, general waste or any other sanitary waste must be dumped in the rivers.</p> <p>3 Polluted runoff must not be directed to the river. Proper storm water attenuation and calming system must be implemented. The receipt from upstream and disbursement of stormwater to lower lying areas should be calmed and managed in consultation with the Infrastructure Department.</p> <p>4 Temporary ablution facilities must be placed at strategic points, serviced at least once a week and away from watercourses. Sufficient toilet facilities must be provided for at least 1 toilet per 20 workers.</p> <p>5 Adequate sedimentation control measures must be instituted at any river crossings when excavations or disturbance of riverbanks or riverbeds or drainage lines of a wetland takes place.</p> <p>6 The batching plant must be positioned away from drainage lines, and measures must be put in place to ensure that no polluted water enters a natural stream, i.e. more than 20m from the nearest</p>	<p>Contractor</p>	<p><i>On going</i></p>

	<p>stream / river channel.</p> <p>7 All runoff from batching areas must be strictly controlled and calmed. Cement contaminated water must be collected, stored and disposed of at a site approved by the Site Engineer.</p> <p>8 Appropriate measures for overflow from batching plants, e.g. during heavy rains, must be put in place.</p> <p>9 The batching plant should be banded with earth berms or sandbags to prevent runoff escaping from the site.</p> <p>10 Waste concrete and cement sludge must be scraped off the site of the batching plant daily and removed to an approved landfill site. (To prevent pollution during the rain).</p> <p>11 During construction through a wetland, the majority of the flow of the wetland should be allowed to pass down stream.</p> <p>12 In-stream diversions should be used rather than the construction of new channels.</p> <p>13 Vehicle traffic across wetland areas must be avoided.</p>		
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	<p>14 A wetland area and/or river must not be drained, filled or altered in any way including alteration of a bed and/or, banks, without prior consent from DWEA. The necessary licenses must be obtained from DWEA in terms of Section 21 and 22 of the National Water Act, (Act 36 of 1998).</p> <p>15 No storm water must be allowed to enter drainage installations (i.e. installations for the reception, conveyance, storage or treatment of sewage). Storm water run-off may not be contaminated with solid or other waste materials during the construction period.</p> <p>16 Every effort must be made to prevent silt from entering the storm water run-off system during construction</p> <p>17 No harvesting of water without permission and the acquisition of a water use license from DWAF</p> <p>18 No construction activity within the 1:100/1:50 (which ever is the greatest) year flood line. Demarcate 1:100/1:50 (which ever is the greatest)year flood line with a temporary fencing structure 6 Stakes plus 2 6 3 strands of wire with hazard tape. Restrict entry into this area.</p>		
Air	<p>1 No fires allowed on site. Constructor to strictly adhere to Regulations 27 of the construction regulations (GN. 1010 of 2003)</p> <p>2 Designated areas must be provided on site,</p>	Contractor	<i>On going</i>

	<p>where smoking can occur in a controlled environment.</p> <p>3 Vehicles must be properly maintained to avoid unnecessary emissions.</p> <p>4 Wetting down dirt roads, bare areas, working areas and stockpiled soil must be done to reduce dust. Water used for this purpose must be such that the quantities used do not generate unnecessary run off.</p> <p>5 Construction vehicles must travel at low speed to reduce the effect of dust.</p> <p>6 All bare patches created by construction related activities must be properly rehabilitated using indigenous grass species.</p>		
Flora	<p>1 All construction activities including workers and machinery must remain inside construction footprint.</p> <p>2 Only indigenous vegetation must be used during landscaping.</p> <p>3 The spread of invasive species must controlled or/ and removed.</p> <p>4 Vegetation must not be cleared unnecessarily. No trees may be cut to generate firewood.</p> <p>5 The site must be rehabilitated to its original state. Indigenous trees must be used to replace any trees removed during construction.</p>	Contractor	<i>On going</i>
Fauna	<p>1 Disturbances to nesting sites of birds must be avoided as far as possible.</p> <p>2 No animal may be poached, snared, hunted, captured or wilfully damaged or destroyed,</p>	Contractor	<i>On going</i>

	<p>unless declared as pest by the project manger.</p> <p>3 Animal movement must not be hindered.</p> <p>4 All labourers must be informed of disciplinary actions for the wilful killing of animals.</p> <p>5 No fishing is allowed on site.</p>		
Noise	<p>1 The relevant by-laws and regulations (as highlighted in the site-specific investigations) must be adhered to. Noise control is regulated by the Environmental Conservation Act, 73 of 1989, Occupational Health and Safety Act, 85 of 1993, provincial guidelines/regulations and local by-laws.</p> <p>2 Noise mufflers and/or soft explosives must be used during blasting to minimise the impact on humans and animals.</p> <p>3 All machinery must be maintained to reduce noise levels.</p> <p>4 All direct Interested and Affected parties must be informed of any noise factors.</p> <p>5 Low speed limits must be adhered to on site.</p> <p>6 Workers should not be allowed to stay on site.</p>	Contractor	<i>On going</i>
Infrastructure	<p>1 Existing infrastructure (e.g. water pipelines, sewer pipelines, storm water systems and drains etc.) must be protected during construction.</p> <p>2 Any damage to the existing services during construction should be immediately reported to the relevant service provider or Municipal Department.</p> <p>3 The contractor is responsible for the repair of the damage caused by construction activities on the</p>	Contractor	<i>On going</i>

	existing infrastructure in consultation with the relevant department which will oversee or appoint the relevant service provider to do the work to the satisfaction and compliance levels of the Municipality		
Traffic	<ol style="list-style-type: none"> 1 The relevant traffic authorisations must be obtained for a way leave for any anticipated disruptions to the traffic (Gautrans, Municipal Roads and Surface Drainage and Public Safety Section). 2 All reasonable precautions must be taken during construction to avoid interruption of the traffic flow. 3 Heavy vehicles and earthmoving equipment must preferably not travel on roads during peak hours. 4 Existing roads should not be blocked or closed-off. 	Contractor	<i>On going</i>
Heritage Resources	<ol style="list-style-type: none"> 1 Should any human remains be found, work must cease and must be reported to the nearest police station. 2 Work in the area can only be resumed once the site has been completely investigated. 3 Should any historical significant findings (e.g. human remains or sites of cultural or archaeological importance) be located, work must cease and South African Heritage and Resource Agency (SAHRA) must be contacted immediately. 4 Work in the area can only be resumed once the site has been completely investigated and 	Contractor	<i>On going</i>

	<p>permission be granted by the SAHRA.</p> <p>5 Under no circumstances may any worker destroy or interfere with archaeological sites or finds.</p> <p>6 A fence at least 2m outside the extremities of the site must be erected to protect archaeological sites.</p>		
Socio-economic	<p>1 Employment of local labourers will be written into the contracts awarded.</p> <p>2 The contractor must be encouraged to use local labourers/ products if available.</p> <p>3 Local labour to be employed through existing community structures or through the services of the CLO.</p>	Contractor	<i>On going</i>
Waste Management	<p>1 All waste removal contractors must be registered and licensed with the City's Waste Hub.</p> <p>2 Suitable waste receptacles (e.g. bins, skips) must be provided at the construction camp.</p> <p>3 Clearly marked litterbins must be provided on site.</p> <p>4 All bins must be cleared of litter regularly.</p> <p>5 Waste recycling must be encouraged through provision of separate bins for separate recyclable waste materials.</p> <p>6 All waste must be regularly removed from site and disposed of at the registered general landfill site.</p> <p>7 All hazardous waste such as oil contaminated soil, chemical spills etc. must be disposed of at the registered hazardous landfill site.</p> <p>8 Adequate environmental protection measures</p>	Contractor	<i>On going</i>

	<p>must be implemented regarding the collection, removal and disposal of waste during each stage of the development.</p>		
Informal traders	<ol style="list-style-type: none"> 1 Plan for informal traders on the construction site to avoid potential problems on site. 2 Access to the site must be controlled. 3 Signs prohibiting other hawkers from operating illegally on / adjacent to the site must be erected. This is important if construction area is near a busy road, for example. 	Contractor	<i>On going</i>
Construction material	<ol style="list-style-type: none"> 1 Cement bags must be stored under a roof or inside a suitable container. 2 Cement must be mixed in designated areas, on impermeable surfaces. 3 The batching plant must be bunded to prevent storm water entry, and to contain dirty water. 4 Building material must be stored in a surface and neat manner. 	Contractor	<i>On going</i>
Disruption of Services: e.g. road access, water and electricity, etc.	<ol style="list-style-type: none"> 1 Where service disruption is inevitable, the Contractor must advise the Project Manager at least 7 days in advance, allowing enough time to inform affected parties including the Public Safety Section and Roads and Surface drainage section of the Municipality.. 	Contractor	<i>On going</i>
Emergency evacuation procedure	<ol style="list-style-type: none"> 1 Collect personal belongings. 2 Check your own area for strange objects. 3 Evacuate to assembly point. 4 Do not panic or run. 5 Look after your visitors. 6 Obey evacuation warden. 	Contractor	<i>As necessary</i>

Incident Reporting and Corrective Measures	Environmental incidents or accidents must be reported to Mogale City Local Municipality or the appropriate local authority departments immediately within the same day of occurrence to ascertain the corrective action that would be necessary.	Contractor	<i>On going</i>
Fire Fighting Equipment	<ol style="list-style-type: none"> 1 Do not interfere or fiddle with fire extinguishers. 2 In the event of a fire, report it immediately as laid down in the emergency procedures. Report and follow the evacuation procedure. 3 Report used fire extinguishers immediately to the safety officer 4 Fire fighting equipment for combating veld fires should be available on a designated place 5 Nobody may remove a fire extinguisher from its designated position except for fire fighting. 	Constructor	<i>As per necessity</i>
Compressed Gases	<ol style="list-style-type: none"> 1 When in use, keep compressed gas cylinders secured or located so that they cannot be knocked over. 2 All flammable and poisonous gas cylinders must have guards fitted at all times. 3 Always use a pressure-reducing regulator when withdrawing gas from a cylinder. 4 Do not use oxygen to dust off clothing. Clothing saturated with oxygen will burn vigorously when ignited. In fact you should never use compressed gas of any kind to dust off clothing. 	Contractor	<i>On going</i>
Protective Equipment	<ol style="list-style-type: none"> 1 Safety glasses or goggles must be used in all areas where required. 2 Hardhats must be used in all areas, where 	Contractor	<i>On going</i>

	<p>required</p> <p>3 Where dustcoats or overalls are provided they should be worn.</p> <p>4 Wear safety shoes if required.</p> <p>5 The correct type of gloves when handling liquids, chemicals or other possible dangerous materials must be worn.</p> <p>6 Ear protectors and hard hats must be worn in designated areas.</p> <p>7 Wear the correct type of respirator for a job -ask your supervisor if you're not sure.</p> <p>8 Report broken / worn protective equipment to your supervisor.</p> <p>9 Ensure that you are using your equipment in the proper manner -ask if you are not sure.</p>		
<p>How to call the Emergency Services</p>	<p>1 Phone the emergency services - know the correct emergency telephone number</p> <p>2 Give your name and telephone number to the emergency dispatcher - in case you are cut off or further details are required</p> <p>3 Briefly describe the emergency (e.g. fire, oil spillage, injury on site, etc.) ó speak calmly and clearly</p> <p>4 Give the exact address/location of the emergency - including the street name and number, cross street, landmarks, etc.</p> <p>5 Answer all questions asked by the emergency dispatcher - do not replace the receiver until after enquiring as to what can be done while waiting for the emergency service to arrive.</p>	<p>Contractor</p>	<p><i>As necessary</i></p>

	6 Return to the incident area - render assistance if possible.		
Health and Hygiene	<ol style="list-style-type: none"> 1 Always wash your hands after finishing work, especially before eating or after you have been using chemicals. 2 Do not eat or drink in work areas. 3 If you are assigned a locker, keep it clean and neat. 4 Do your part to keep workplaces, washrooms, toilets, drinking fountains and locker rooms neat and sanitary. 5 Keep your work area clean - do not litter, use waste bins. 	Contractors	<i>On going</i>
Healthy and Safety	<ol style="list-style-type: none"> 1 Best practice methods must always be employed and appropriate Regulations adhered to, for example when blasting. 2 No open trenches should be permitted without the use of demarcation tape. 3 Speed limits must be enforced in all areas, including public roads and private property to avoid potential accidents. 4 There must be a first aid facility on site. 5 Advance warning of blasting activities. 6 A certified practitioner must undertake erection of scaffolding. 7 Regular auditing of safety requirements must be undertaken in order to monitor and control problems before they become unmanageable. 8 A safety and health officer must be employed to monitor project activities for any potential 	Contractor	<i>On-going</i>

	<p>problems.</p> <p>9 Workers' right to refuse work in unsafe conditions must be respected.</p> <p>10 Personnel must be trained in basic site safety procedures.</p> <p>11 Secure storage of materials on site particularly hazardous materials e.g. chemicals and fuels.</p> <p>12 Adequate signage on and off site about potential hazards must be provided.</p> <p>13 The contractor should implement adequate and mandatory safety precautions relating to all aspects of the operation. Such safety measures and work procedures/instructions should be communicated to construction workers. Warning and advisory signage should be implemented (also with regards to construction vehicle movement along public roads).</p> <p>14 In the case of road upgrading or construction - the improved road surface would cause speed to increase. It is therefore imperative that speed control measures and correct signage are put in place.</p> <p>15 When lifting heavy loads, use mechanical means if possible. If this is not possible, obtain sufficient help from fellow workers. Under no circumstances must you put excessive strain on your back. Always lift with a straight back and bent knees.</p>		
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3. OPERATION PHASE

Environmental Consideration	Mitigation measures	Responsible Party	Frequency
Soil	Emergency plan or procedures must be developed and implemented during operational phase of the project.	Implementing Department	<i>On going</i>
	Emergency plans or procedures must be reviewed and amended regularly.	Implementing Department	<i>On going</i>
	Contaminated areas must be properly rehabilitated.	Implementing Department	<i>On going</i>
	Stormwater management and calming must be implemented.	Implementing Department	<i>On going</i>
	Drainage lines must be kept clean and unobstructed.	Implementing Department	<i>On going</i>
	Water Monitoring plan must be developed (if applicable).	Implementing Department	<i>Once off</i>
	Water Monitoring Plan must be adequately implemented.	Implementing Department	<i>On going</i>
	Water monitoring results must comply with Department of Water and Environmental Affairs standards (if applicable)		
Air	Air quality management plan must be formulated and implemented.	Implementing Department	<i>On going</i>
Flora	Only indigenous trees must be used for landscaping. Must ensure that operations do not impact negatively on protected flora	Implementing Department	<i>On going</i>
Fauna	Disturbances to animals and animal habitats must be avoided during maintenance functions. Must ensure that operations do not impact	Implementing Department	<i>On going</i>

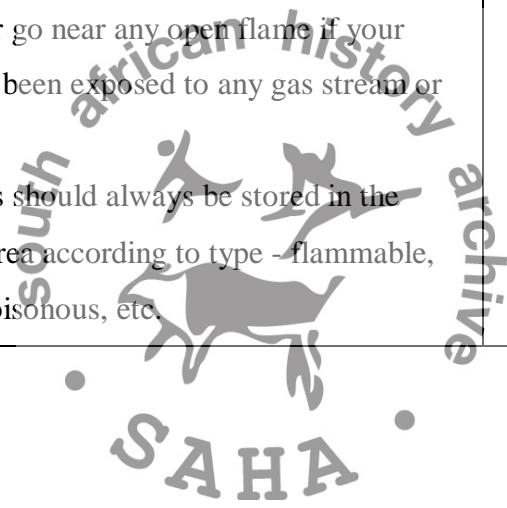
	negatively on protected fauna		
Aesthetics	Area must be kept in a clean state, free of waste.	Implementing Department	<i>On going</i>
Noise	All machinery must be maintained to reduce noise levels in terms of the Municipal Health By Laws. Noise mitigation measures must be implanted throughout operational phase of the project. Noise must be controlled from the point of source.	Implementing Department	<i>On going</i>
Fuel and chemicals	<ol style="list-style-type: none"> 1 Elevated fuel storage tanks must be provided with impermeable floor surface and bund walls to prevent pollution during accidental spillages. 2 In the event of a fuel spill in excess of 25L, the spill must be confined and mopped up using oil absorbent fibres. 3 Services of professionals cleaning agency should be procured for the cleanup of spills in excess of 25L. 4 The contaminated soil should then be removed to a depth of 0,5m below the saturated spill level. 5 This soil must be disposed of at a registered landfill site. 6 The efficiency of the clean up should be monitored to ensure that all the spilt fuel is removed from the soil. 	Implementing Department	<i>On going</i>
Incident Reporting and Corrective Measures	Environmental incidents or accidents must be reported to the appropriate local authority departments immediately to ascertain the corrective action that would be necessary.	Implementing Department	<i>On going</i>
Protective	Proper safety gear suitable for the operational	Implementing	<i>On going</i>

Equipment	requirements of the facility must be adhered to.	Department	
Fire Fighting Procedure	<p>Establish emergency procedure for dealing with fire incidents</p> <ol style="list-style-type: none"> 1 Do not interfere or fiddle with fire extinguishers. 2 In the event of a fire, report it immediately as laid down in the emergency procedures. Report and action a fire by following through the evacuation procedure. 3 Report used fire extinguishers immediately to the safety officer 4 Nobody may remove a fire extinguisher from its designated position except for fire fighting. 5 Fire fighting equipment for combating veld fires should be available on a designated place. 6 All employees should be informed of the risks of a veld fire and should be properly trained in fire prevention and fire combating principles. 	Implementing Department	<i>As per necessity</i>
Emergency evacuation procedure	<p>Establish emergency procedure for dealing with emergency situations</p> <ol style="list-style-type: none"> 1 Collect personal belongings. 2 Check your own area for strange objects. 3 Evacuate to assembly point. 4 Do not panic or run. 5 Look after your visitors. 6 Obey evacuation warden. 	Implementing Department	<i>As necessary</i>
Emergency Procedures	<p>Establish emergency procedure for dealing with fire or spills e.g. diesel, tar, cement substances, etc. All spills, accidents or fires are to be reported immediately.</p> <p>The following must be in place:</p>	Implementing Department	<i>On going</i>

	<ol style="list-style-type: none"> 1 Draw up a plan on emergency preparedness procedure; 2 Train staff on the emergency preparedness procedure; 3 Undertake dry-run session on emergency procedure. 4 Design, develop and test/exercise appropriate emergency preparedness programmes (plans, schedules, procedures and methods) for addressing environmental accidents and incidents such as, spills of fuel, oil or lubricants; fires and heavy rainfall causing exceptional runoff leading to soil erosion and silt laden runoff etc. 5 Implement these programmes whenever necessary. 6 Ensure that experienced and skilled personnel are designated and authorised to take remedial and corrective action in the case of an accident or incident e.g. fire officer, first aid officer and for spills. 7 Ensure that the emergency numbers for the area are displayed and available at any time. 8 Ensure that all labourers are supplied with the appropriate safety equipment. 9 Ensure that all restricted/dangerous areas are safeguarded and sign posted to ensure labourer and public safety. 10 Ensure that basic fire fighting equipment is available i.e. fire extinguishers, rubber beaters 		
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	and a water tank equipped with a pump and a hose.		
How to call the Emergency Services	<ol style="list-style-type: none"> 1 Ensure that all known emergency contact numbers are displayed; 2 Phone the emergency services - know the correct emergency telephone number 3 Give your name and telephone number to the emergency dispatcher - in case you are cut off or further details are required 4 Briefly describe the emergency (e.g. oil spillage) ó speak calmly and clearly 5 Give the exact address/location of the emergency - including the street name and number, cross street, landmarks, etc. 6 Answer all questions asked by the emergency dispatcher - do not replace the receiver until after enquiring as to what can be done while waiting for the emergency service to arrive. 7 Return to the incident area - render assistance if possible. 	Implementing Department	<i>As necessary</i>
Compressed Gases	<ol style="list-style-type: none"> 1 When in use, keep compressed gas cylinders secured or located so that they cannot be knocked over. 2 All flammable and poisonous gas cylinders must have guards fitted at all times. 3 Always use a pressure-reducing regulator when withdrawing gas from a cylinder. 4 Do not use oxygen to dust of clothing. Clothing saturated with oxygen will burn vigorously when ignited. In fact you should never use compressed 	Implementing Department	<i>On going</i>

	<p>gas of any kind to dust off clothing.</p> <p>5 If compressed gas cylinders have to be off-loaded onto a hard ground use the correct lifting equipment or if not available, use a rubber mat to cushion the impact.</p> <p>6 Be sure that the cylinder always has a label on it identifying the contents. Always refer to the gas by its correct name. Oxygen is oxygen not just gas.</p> <p>7 Always test equipment connected to the cylinder before using to make sure it does not leak. Do not smoke or go near any open flame if your clothes have been exposed to any gas stream or leak.</p> <p>8 Gas cylinders should always be stored in the designated area according to type - flammable, oxidising, poisonous, etc.</p>		
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4. DECOMMISSIONING PHASE

Environmental Consideration	Mitigation measures	Responsible Party	Frequency
Soil	Emergency plan or procedures for decommission must be developed and implemented during decommissioning phase of the project. .	Implementing Department or Contractor	<i>Once off</i>
	Emergency plans or procedures for decommissioning must be reviewed and amended regularly.	Implementing Department or Contractor	<i>On going</i>
	Contaminated areas must be properly rehabilitated.	Implementing Department or Contractor	<i>On going</i>
	Stormwater management must be implemented.	Implementing Department or Contractor	<i>On going</i>
	Drainage lines must be kept clean and unobstructed.	Implementing Department or Contractor	<i>On going</i>
Ground water	No rubble, general waste or any other sanitary water must be dumped in the rivers.	Implementing Department or Contractor	<i>On going</i>
	Air quality management plan must be implanted.	Implementing Department or Contractor	<i>On going</i>
	Dust must be reduced by wetting down dirt roads, bare areas, working areas and stockpiled soil. Water used for this purpose must be used in quantities that must not result in the generation of run off.	Implementing Department or Contractor	<i>On going</i>

	Disturbances to nesting sites of birds must be avoided as far as possible.	Implementing Department/ contractor	<i>On going</i>
	No fishing is allowed on site.	Implementing Department/ contractor	<i>On going</i>
Aesthetics	Area must be kept in a clean state, free of waste and the applicable kerb deposit shall be paid to the Building Control Section in order to ensure compliance and removal of rubble.	Implementing Department/ contractor	<i>On going</i>
	All machinery must be maintained to reduce noise levels.	Implementing Department/ contractor	<i>On going</i>
	Work must be restricted to the normal work hours, which are between sunrise and sunset.	Implementing Department/ contractor	<i>On going</i>
Traffic	The relevant traffic authorities must be contacted for any anticipated disruptions to the traffic.	Implementing Department/ contractor	<i>On going</i>
	Employment of local labourers will be written into the contracts.	Implementing Department/ contractor	<i>On going</i>
	The contractor must be encouraged to use local products if available.	Implementing Department/ contractor	<i>On going</i>
	Local labour to be employed through existing community structures.	Implementing Department/ contractor	<i>On going</i>
	Elevated fuel storage tanks must be provided with impermeable floor surface and bund walls to	Implementing Department/	<i>On going</i>

	prevent pollution during accidental spillages.	contactor	
	<p>1 In the event of a fuel spill in excess of 25L, the spill must be confined and mopped up using oil absorbent fibres.</p> <p>2 Professionals should perform cleaning of large spills.</p> <p>3 The contaminated soil should then be removed to a depth of 0,5m below the saturated spill level.</p> <p>4 This soil must be disposed of at a registered landfill site.</p> <p>5 The efficiency of the clean up should be monitored to ensure that all the spilt fuel is removed from the soil.</p>	Implementing Department/ contactor	On going



7. TRAINING AND ENVIRONMENTAL AWARENESS

Training is essential for ensuring the GEMP provisions are implemented efficiently and effectively. Training needs be identified based on the availability and existing capacity of the site (including the project manager, contractors and sub-contractors) to undertake the required GEMP management actions and monitoring activities. All personnel must be adequately trained to perform their designated tasks to an acceptable standard.

A once off workshop for all the MCLM councillors and contractors who provide service to MCLM will be conducted.

Regular general environmental awareness must be undertaken by the contractor among the project's workforce to encourage the implementation of environmentally sound practices throughout project duration.

8. DOCUMENT AND RECORD KEEPING

A document handling system must be established to ensure accurate update of the GEMP implementation plan, and availability of all documents required for the effective functioning of the GEMP. The GEMP document handling system must be revised by the project manager and the contractor, and agreed to by all key parties.

9. REPORTING

Reporting procedure for conveying information from the monitoring activities must be developed in order to ensure adequate implementation of GEMP. The project manager together with the contractor must devise reporting procedure for dealing with:

- 1 Inspections;
- 2 Accidents and emergencies;
- 3 Records of monitoring activities.

- 4 Training programmes and evidence of appropriate levels or amount of skills or capacities created.
- 5 Procedure devised must be made available to the lead authority up on request.

10. GEMP REVIEW

The GEMP should be reviewed under following conditions:

- 1 Changes in legislation;
- 2 Inadequate mitigation measures
- 3 Secondary impacts occur as a result of the mitigation measures;
- 4 Occurrence of unanticipated impacts of greater intensity, extent and significance than predicted.

11. REFERENCES

- 1 *Compendium of South African Environmental Legislation*, edited by Morner van der Linde
- 2 *Integrated Environmental Management Information Series*, Volume: II, Department of Environmental Affairs and Tourism
- 3 *Guideline for Environmental Management Plans*, Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning, Edition 1, 2005